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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,061	08/18/2000	Blake Lewis	103.1035.01	6742

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EXAMINER

LE, MIRANDA

ART UNIT PAPER NUMBER

2167

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/642,061

Applicant(s)

LEWIS ET AL.

Examiner

Miranda Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 24-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 24-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 021605.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/27/2004 has been entered.

2. This communication is responsive to Amendment filed 09/27/2004.

Claims 1-8, 24-45 are pending in this application. Claims 1, 26, 36 are independent claims. In the Amendment, claims 1, 26, 36 have been amended, no claim has been added, cancelled. This action is made non-Final.

Information Disclosure Statement

3. Applicants' Information Disclosure Statement, filed 10/01/2004, has been received, entered into the record, and considered. See attached form PTO-1449.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless:

(e) the invention was described in

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(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-23, 25-31, 34-48 are rejected under 35 U.S.C. 102(e) as being anticipated by Sekido et al. (US Patent No. 6,311,193 B1).

Sekido anticipated independent claims 1, 26, 36 by the following:

As to **claims 1, 26, 36**, Sekido teaches a method of capturing the contents of files and directories in a file system, said file system comprising a set of storage blocks in a mass storage system including steps of (col. 2, line 53 to col. 3, line 21): recording an active map (i.e. SS information, Fig. 20) in said file system of said storage blocks used by said active file system (col. 2, line 53 to col. 3, line 21, col. 10, line 60 to col. 11, line 14, Fig. 20);

recording a consistency point in said file system including a consistent version of said file system at a previous time (i.e. the contents of the files at a specific point in time), said consistency point including a copy of said active map at said previous time (col. 2, line 53 to col. 3, line 29, col. 10, line 59 to col. 11, line 15, Fig. 20);

refraining from writing data to storage blocks in response to said active map and at least one said copy of said active map included in said consistency point (i.e. delaying the update of data, col. 2, line 53 to col. 3, line 21, col. 6, lines 1-15).

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As to claims 2, 27, 37, Sekido teaches said step of refraining includes determining a logical union of said storage blocks used by one or more of said copies of said active map included in said consistency point (Fig. 35 shows the bit map 6 where 1s corresponds to valid block and 0s corresponds to invalid blocks. Fig. 36 shows a logical union of the blocks. Fig. 31 shows the bit map ST10 as the result of logical union blocks of ST1 and ST3. Col. 17, lines 42-51, col. 18, lines 55-61, col. 19, lines 20-28).

As to claims 3, 28, 38, Sekido teaches said step of refraining includes determining a subset of said storage blocks used by one or more of said copies of said active map included in said consistency point (i.e. all the blocks in active map ST in Fig. 31 is a subset of storage blocks in SS1 in Fig. 21. Col. 11, line 36 to col. 12, line 49).

As to claims 5, 30, 40, Sekido teaches said active map included in said consistency point is a snapmap (col. 8, lines 31-59).

As to claims 6, 31, 41, Sekido teaches the step of removing a root inode (i.e. parent SS) of said snapmap using a snap delete (col. 16, lines 23-44, Fig. 28).

As to claims 7, 32, 42, Sekido teaches steps of determining not to write to a block after said step of removing, provided a previous or next snapmap uses said block (i.e. the modification of a snapshot is permitted. Col. 16, lines 23-44.

As to claims 24, 34, 44, Sekido teaches the step of generating a summary map (Fig. 31) responsive to at least one said copy of said active map included in said

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consistency point (Fig. 31, 35, 36. Col. 18, line 59 to col. 19, line 27, col. 17, lines 41-51).

As to claims 25, 35, 45, Sekido teaches step of refraining from writing data to said storage blocks is accomplished by being responsive to said summary map (i.e. delaying update, col. 2, line 44 to col. 3, line 21.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 4, 8, 29, 33, 39, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekido et al. (US Patent No. 6,311,193 B1), in view of Hitz et al. (US Patent No. 5,819,292).

As to claims 4, 29, 39, Sekido does not specifically teach "file system is a WAFL file system". However, Hitz teaches this limitation at col. 5, lines 48-59, col. 8, lines 16-39, col. 11, lines 6-27.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Sekido with the teachings of Hitz to include “file system is a WAFL file system” in order to maintain a file system in a consistent state wherein WAFL always write new data to unallocated blocks on disk.

As to claims 8, 33, 43, Sekido does not explicitly teach “steps of copying modified data to a new block and saving old data in a current data block so as to implement a copy-on-write mechanism”. However, Hitz teaches this limitation at col. 22, lines 4-16.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Sekido with the teachings of Hitz to include “steps of copying modified data to a new block and saving old data in a current data block so as to implement a copy-on-write mechanism” in order to identify the blocks that are used by both the active file system and the read-only copy so that new data written to the active file system does not overwrite ‘old’ data that is part of the done, and therefore, must not change.

Response to Arguments

8. Applicant's arguments regarding claims 1, 26, 36 have been amended to emphasize the difference between Rungta's file map and a file system as claimed, have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

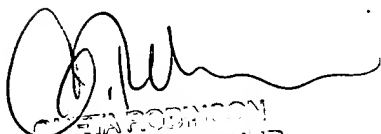
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (571) 272-4107. The fax number to this Art Unit is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Miranda Le
February 17, 2005


CHRISTOPHER ROBINSON
PATENT EXAMINER